

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 48487 - PT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/CA 03/01624	International filing date (day/month/year) 24/10/2003	(Earliest) Priority Date (day/month/year) 25/10/2002
Applicant ALCAN INTERNATIONAL LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1
☐ None of the figures.

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International application No.
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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claim : 1

Claim 1 defines in the preamble a method of making cast Al-based metal matrix composite material by melt stirring 10-40% wt. boron carbide particles into the melt before casting.

The said method is further defined in three different ways which are not unified by a single inventive concept as required by Rule 13(2) PCT for the reasons given below:

Claim 1(a) the Mg content of the matrix alloy is kept below 0.2% (wt).

2. Claim : 1

Claim 1(b) the Mg content of the starting material is kept below 0.2% (wt). Further additions of Mg are added prior to casting.

3. Claim : 1

Claim 1(c) the matrix alloy contains at least 0.2% (wt) Tj.

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C22C1/10 B22D19/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C22C B22D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
✓ X	LUCAS, STEPHENS, GREULICH: "The Effect of Reinforcent Stability on Composition Redistribution in Cast Aluminium Metal Matrix Composites" MATERIALS SCIENCE AND ENGINEERING, no. A131, 1991, pages 221-230, XP002270490 usa abstract page 222, column 2 page 223, column 1 tables 1,AND,2 --- -/--	1,12, 14-16, 18,19, 24,26-33

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

6 May 2004

Date of mailing of the international search report

25.05.04

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Brown, A

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 786 467 A (SKIBO MICHAEL D ET AL) 22 November 1988 (1988-11-22) The whole document. column 3 -column 4 column 5, line 27 - line 41 column 8, line 35 column 9, line 3 - line 7 ---	1-5, 18-21
X	KENNEDY, BRAMPTON: "The Reactive Wetting and Incorporation of B4C Particles into Molten Aluminium" SCRIPTA MATERIALIA, no. 44, 2001, pages 1077-1082, XP002270491 Uk See introduction and Experimental Procedure. page 1077 -page 1078 table 1 ---	24,30,33
A	US 5 186 234 A (SKIBO MICHAEL D ET AL) 16 February 1993 (1993-02-16) The whole document. ---	1-33
A	CHERNYSHOVA, REBROV: "Interaction Kinetics of Boron Carbide and Silicon Carbide With Liquid Aluminium" JOURNAL OF THE LESS COMMON METALS, no. 117, 1986, pages 203-207, XP002270492 Russia The whole document. ---	1-33
A	US 5 965 829 A (OSCHMANN EDWARD L ET AL) 12 October 1999 (1999-10-12) The whole document. -----	1-33

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Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4786467	A	22-11-1988	AT 99000 T	15-01-1994
			AU 606598 B2	14-02-1991
			AU 7393987 A	24-11-1987
			CA 1293104 C	17-12-1991
			DE 3788556 D1	03-02-1994
			DE 265498 T1	16-08-1990
			EP 0265498 A1	04-05-1988
			ES 2006139 A6	16-04-1989
			ES 2012588 A6	01-04-1990
			JP 7000819 B	11-01-1995
			JP 1501489 T	25-05-1989
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			MX 169340 B	30-06-1993
			NO 891001 A	09-05-1989
			US 4865806 A	12-09-1989
			WO 8706624 A1	05-11-1987
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			US 5167920 A	01-12-1992
			US 4759995 A	26-07-1988
			ZA 8703111 A	25-01-1989
			ZA 8707100 A	25-01-1989

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			AU 669309 B2	30-05-1996
			AU 7903194 A	16-02-1995
			AU 652950 B2	15-09-1994
			AU 8187991 A	18-02-1992
			CA 2086520 A1	17-01-1992
			WO 9201821 A1	06-02-1992
			DE 69120415 D1	25-07-1996
			DE 69120415 T2	31-10-1996
			EP 0539417 A1	05-05-1993
			EP 0671478 A2	13-09-1995
			MX 9100238 A1	28-02-1992
			NO 930141 A	15-03-1993
			NO 971130 A	15-03-1997
			ZA 9105557 A	29-07-1992

US 5965829	A	12-10-1999	NONE	
